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### **REMARKS**

Applicant appreciates the thorough examination of the present application as evidenced by the Office Action. Applicant appreciates acceptance of the drawings filed on October 11, 2003 and the indication of allowable subject matter in Claims 4-9, 12, 23 and 37-42. Applicant respectfully submits the present rejections should be withdrawn for at least the reasons discussed below.

#### **The Claim Objections:**

Claims 13-18, 27-33 and 43-48 stand objected to because of the recitation "partitioning the sequence of symbols" in independent Claim 13 and 43 and "partitions the sequence of symbols" in Independent Claim 27 with out inclusion of the term "second" for the sequence of symbols. Office Action, p. 2. As the Examiner's suggested amendments are made above, Applicant requests withdrawal of the objections to Claims 13-18, 27-33 and 43-48 as obviated.

#### **The Section 112 Rejections:**

Claims 13-18, 27-33 and 43-48 stand rejected under 35 U.S.C. § 112 as being indefinite because independent Claims 13, 27 and 43 recite "determining the desired demodulation type" rather than "types" as suggested by the Examiner. Office Action, pp. 2-3. To expedite prosecution of this application, Applicant has amended independent Claims 13, 27 and 43 to recite desired demodulated "types" rather than "type." Accordingly, the rejections of Independent Claims 13, 27 and 43 and Dependent Claims 14-18, 28-33 and 44-48 should be withdrawn as obviated.

#### **Claims 13-18, 27-33 and 43-48 Are In an Allowable Form:**

Applicant notes that Claims 13-18, 27-33 and 43-48 were only rejected under Section 112, not based on any of the prior art cited against the present application. Accordingly, as the objections to the claims and the Section 112 rejections have been fully addressed above, Applicant submits that Claims 13-18, 27-33 and 43-48 are now in form for allowance.

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**Claims 4-9, 12, 23 and 37-42 Are In a Form Indicated as Allowable:**

Claims 4, 6, 12, 23, 37 and 39 are amended to independent form above to place them in a form indicated as allowable. Claims 5, 7-9, 38 and 40-42 depend from respective ones of these claims. Applicant notes that, in placing the claims in independent form, recitations related to use of the first selected demodulation type "between the interferer signal characteristic discontinuity and the known block" are replaced with "a first portion of the unknown block." Accordingly, Applicant submits that Claims 4-9, 12, 23 and 37-43 are now in form for allowance.

**Claims 1-3, 10-11, 19-22, 25-26 and 34-36 Are Not Anticipated by Skold**

Claims 1-3, 10-11, 19-22, 25-26 and 34-36 stand rejected under 35 U.S.C. § 102(b) as anticipated by WO 98/38750 to Skold *et al.* ("Skold"). Office Action, p. 4. More particularly, page 15, lines 7-9 of Skold are cited as disclosing detecting an interferer signal characteristic discontinuity location in the unknown block. Office Action, p. 4. The cited portion of Skold, in its entirety, recites "...of the interfering-signal component portions are selected from such set. The estimator 94, of which the channel estimator 98 forms a portion, is operable to extract the training sequences associated with one or more interfering-signal component portions." Skold, page 15, lines 7-9.

Applicant submits that this cited portion fails to disclose or suggest the detection of an interferer discontinuity location. Instead, Skold describes determining whether a receiver is in a channel environment where it would be beneficial to utilize joint demodulation because a dominant interference source (associated with one of a known set of training sequences) is present on the receive channel as seen at the receiver. *See*, Skold, page 18, line 9 to page 19, line 2. There is no discussion or suggestion of using different types of demodulation for different portions of an unknown block as recited in independent method Claim 1. Furthermore, there is no discussion of detecting an interferer discontinuity "boundary," just the general presence of an interferer making joint demodulation beneficial. Accordingly, the rejection of independent Claim 1 over Skold should be withdrawn for at least these reasons.

Furthermore, Claim 1 also recites using the first selected demodulation type "between the interferer signal characteristic discontinuity and the known block." The Office Action relies on item 118 of Skold as disclosing such recitations. Office Action, pp. 4-5. However, item 118 is a joint detector with no described ability to selectively apply itself to only portions of a received signal slot. Thus, it clearly provides no disclosure of using itself for a specific portion of a slot of a received signal, nonetheless the particular portion recited in Claim 1. Accordingly, the rejection of independent method Claim 1 over Skold should also be withdrawn for at least these additional reasons.

Independent Claims 19 and 34 are patentable based on corresponding recitations therein for substantially the same reasons as discussed above with reference to Claim 1. Dependent Claims 2-3, 10-11, 20-22, 25-26 and 35-36 are patentable at least based on the patentability of the claims from which they depend. Accordingly, the rejections of Claims 1-3, 10-11, 19-22, 25-26 and 34-36 over Skold should be withdrawn for at least these reasons.

**Claims 1, 2, 19, 20 and 34-35 Are Not Anticipated by Chandrasekaran**

Claims 1, 2, 19, 20 and 34-35 stand rejected under 35 U.S.C. § 102(a) as anticipated by Chandrasekaran et al. ("A constrained least-squares algorithm with data adaptive beamforming and equalization for co-channel TDMA signals," Signal Processing 80 (2000), pages 2033-2047, listed in the IDS filed 08/12/02, "Chandrasekaran" hereinafter). As discussed above, independent Claim 1 recites "demodulating the unknown block using a first selected demodulation type between the interferer signal characteristic discontinuity and the known block." Independent Claims 19 and 34 include corresponding recitations.

In contrast, Chandrasekaran does not describe a difference in demodulation type between a discontinuity and a known sequence. By way of explanation with reference to Fig. 1 of Chandrasekaran, if user 3 is a slot (from symbol time 162 through 324) of a received signal to be processed (i.e., user 3 is the signal desired to be received), then the training sequence 2 may be alleged to correspond to a known block. Similarly, the overlapping portions of the user 2 and user 4 signals appear to be alleged as the interferers with discontinuities relative to the user 3 slot. Thus, the period between the edge of user 2 at

symbol time 168 and the start of training sequence 2 (some symbol time later, not designated in Fig. 1 of Chandrasekaran) would correspond to the portion recited in Claim 1 for the first selected demodulation type. However, this period is not distinguished in Chandrasekaran, which does not even designate the start and stop symbol time for the training sequences. Instead, Chandrasekaran suggests that it is for the intervals [162,167] and [311,324] of slot 3 in Fig. 1 of Chandrasekaran that the second pass, as contrasted with the weighted beamform first pass, would use a different beamforming. *See*, Chandrasekaran, §§ 3.2.2-3.2.3. Thus, there is no identification of beamforming differently for the portion recited in Claim 1. The rejections of Claim 1 over Chandrasekaran should be withdrawn for at least these reasons. Independent Claims 19 and 34 contain corresponding recitations therein. Accordingly, the rejections of independent Claims 1, 19 and 34 and dependent Claims 2, 20 and 35 that depend therefrom should be withdrawn for at least these reasons.

Applicant further notes that the first and second pass discussed in Chandrasekaran relate to a beamformer that sums received signals with various weightings and sends an aggregate signal to the equalizer to be demodulated. That equalizer appears to only perform one type of demodulation on the aggregate signal received from the beamformer regardless of the receive channel interference characteristics.

#### **Claims 25-26 Are Patentable Over Chandrasekaran in Combination With Skold**

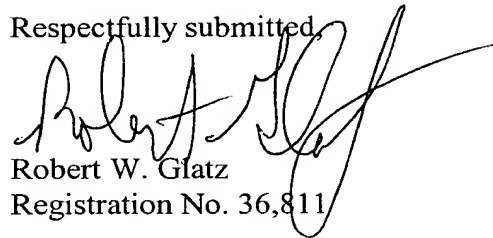
Claims 25-26 stand rejected under 35 U.S.C. § 103 as being unpatentable over Chandrasekaran in view of Skold. Final Action, p. 12. Dependent Claims 25 and 26 are patentable at least based on the patentability of Claim 19 from which they depend. As noted above, both Chandrasekaran and Skold fail to disclose or suggest all the recitations of the independent claims. Accordingly, Applicant respectfully submits that the obviousness rejections of Claims 25 and 26 should be withdrawn for at least these reasons.

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**Conclusion**

Applicant respectfully submits that, for the reasons discussed above, the present amendment places this case in form for allowance. Accordingly, Applicant respectfully requests entry of this amendment, allowance of all the pending claims and passing this application to issue.

Respectfully submitted,



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